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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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*Ex parte* MARTIN BRODT,
UWE FISCHER, and RALF MEHRHOLZ

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Appeal 2010-000902
Application 10/527,721
Technology Center 1700

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Before CATHERINE Q. TIMM, LINDA M. GAUDETTE, and MARK NAGUMO, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision[2] finally rejecting claims 1-12.[3] We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

Claim 1 is representative of the invention and is reproduced below from the Claims Appendix to the Appeal Brief:

1. A method of producing a press-hardened metallic shaped part, comprising the following method steps:

(I)- providing a sheet blank of a hot-workable steel sheet;

(II)- cold forming a part blank (10) having a three-dimensional shape and outer contour corresponding approximately to that of the finished product from the sheet blank (2);

(III)- trimming the part blank (10) at the margins to a marginal contour (12') approximately corresponding to the part (1) to be produced;

(IV)- heating and press-hardening the trimmed part blank (17) in a hot-forming tool (23); and

(V)- final shaping the heated product of step (IV) and rapidly cooling the trimmed part blank (17) in a hot-forming tool (23) to set the material structure.

[2] Final Office Action mailed Oct. 28, 2008.
[3] Appeal Brief filed Apr. 28, 2009 ("Br."), 2 (noting that claim 13 was cancelled after the final Office Action).

Appellants request review of the following grounds of rejection (Br. 4):

1. Claims 1, 6, 10, and 11 under 35 U.S.C. § 102(e) as anticipated by Tjoelker (US 6,918,224 B2, issued Jul. 19, 2005) (Ans.[4] 3-5);

2. Claims 2-4 and 12 under 35 U.S.C. § 103(a) as unpatentable over Tjoelker as applied to claim 1, and further in view of term definition for "stamping" on Wikipedia (www.wikipedia.org) (Ans. 5-6); and

3. Claims 5 and 7-9 under 35 U.S.C. § 103(a) as unpatentable over Tjoelker as applied on claim 1, and further in view of Bronsema (US 5,669,992, issued Sept. 23, 1997) (Ans. 6-8).

Appellant contends Tjoelker cannot anticipate the claim 1 because Tjoelker fails to teach hot forming as recited in steps (IV)-(V). (Br. 5.)

We limit our discussion to the following, dispositive issue:

Did the Examiner err in finding that the claim 1 hot-forming steps (steps (IV)-(V)) read on Tjoelker's step of induction heating in a clamping device? (*See* Ans. 4; Br. 5-6 and 11.)

During examination, claim terms must be given their broadest reasonable construction consistent with the Specification. *In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007). "Generally, terms in a patent claim are given their plain, ordinary, and accustomed meaning to one of ordinary skill in the relevant art. After identifying the plain meaning of a disputed claim term, the court examines the written description and the drawings to determine whether use of that term is consistent with the ordinary meaning of the term." *Prima Tek II, L.L.C. v. Polypap, S.A.R.L.*, 318 F.3d 1143, 1148 (Fed. Cir. 2003) (citations omitted).

[4] Examiner's Answer mailed Jul. 30, 2009.

The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1358 (Fed. Cir. 1999). Prior art references may be "indicative of what all those skilled in the art generally believe a certain term means" and "can often help to demonstrate how a disputed term is used by those skilled in the art." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996).

As an initial matter, we note the Specification[5] does not explicitly define the term "press-hardening" (*cf.* Spec. [00040] (referring to the resulting "scale-free press-hardening process")), nor does the Specification provide a detailed description of a "hot-forming tool" (*see e.g.*, Spec. [00034]). However, the plain meaning of the words "press-hardening" indicate that mechanical pressure is applied to harden the work-piece. Moreover, based on a review of the Specification and the related art, we find that "press-hardening" is a term of art and that the ordinary artisan at the time of Appellants' invention would have understood that in a press-hardening process, a piece of sheet steel ("blank") is first heated to a temperature above the austenizing temperature. (Spec. [00033]; *cf.* US 7,832,242 B2, issued Nov. 16, 2010 to Brandstätter ("US 242"), col. 3, ll. 4-5; US 7,678,208 B2, issued Mar. 16, 2010 to Bodin ("US 208"), col. 1, ll. 60-67.) The heating may be carried out in a continuous furnace or inductively. (Spec. [00021]; US 5,972,134, issued Oct. 26, 1999 to Buschsieweke ("US 134")[6], col. 4, ll. 42-46.) "The inductive process offers

[5] Filed Mar. 14, 2005 ("Spec.").
[6] Tjoelker describes US 134 as disclosing a process of hot forming steel into the desired configuration. (Tjoelker, col. 1, ll. 34-35.)

the possibility of concentrating the heating deliberately on one or more limited areas of a molded structural part. The heating is limited specifically to the zones whose ductility is to be increased." (US 134, col. 2, ll. 46-49; *see also*, Spec. [00021].)

We further find that the ordinary artisan would have understood that in a press-hardening process, the blank, after being heated by induction or otherwise, is finish-shaped and rapidly cooled in a hot-forming tool. (Spec. [00034] ("The heated trimmed part blank 17 is then inserted by means of a manipulator 22 into a hot-forming tool 23, in which the three-dimensional form and the marginal contour 12' of the trimmed part blank 17 are given their final, desired size."); US 134, col. 4, ll. 17-19.) "Conventionally, the forming tool consists of a fixed lower tool, the die, and the movable upper tool, the punch. The blank . . . is positioned on the lower tool element. The forming takes a second or two and the formed blank, the product, remains clamped between the pair of tools for a number of seconds more until it has hardened with the tool pair as a fixture." (US 208, col. 1, ll. 60-67; *see also*, Application Fig. 1d (hot-forming tool 23); US 134 Fig. 2 (pressing tool 7).) "[H]ardening which covers the entire part [] may be effected; alternatively, by a suitable form of the hot-forming tool (e.g. insulating inserts, air gaps, etc.), selected regions of the part [] may be omitted from the hardening, so that the part [] is only hardened locally." (Spec. [00034]; *see also*, US 134, col. 4, ll. 27-31.)

Based on the foregoing, we interpret the term "press-hardening" as used in the claims as requiring forming a blank, "heated to a temperature which is above the structural transformation temperature in the austenitic state" (Spec. [00033]), into a final, desired shape, in a tool capable of

modifying the shape of the blank by the application of mechanical pressure and rapidly cooling the blank. (*See* Spec. [00034] ("This method step corresponds to hardening of the part 1 and permits specific setting of the material strength.").)

Tjoelker discloses a process in which a "beam blank or workpiece is initially forcefully cold formed at substantially ambient temperature from nonhardened steel, such as by stamping and/or rolling techniques of conventional type, into the desired configuration." (Tjoelker, col. 4, ll. 14-17.) Both flange ends of the workpiece are then clamped securely in a fixture. (*Id.* at ll. 27-30.) "Preferably one pair of these clamping elements . . . allows the respective flange to move only longitudinally, but not vertically or torsionally, to accommodate beam expansion and contraction due to temperature increases and decreases during the induction heat treating process, but prevent[s] significant vertical or torsional distortion." (*Id.* at ll. 39-45.) "The formed workpiece is then hardened in strategically predetermined areas over its length, by proximity coil induction heating while the beam is fixture restrained." (Tjoelker, col. 2, ll. 14-17.)

The Examiner's anticipation rejection is based on a finding that

> [t]he clamping device of [Tjoelker] is one kind of hot-forming tools [sic] because it limits the motion of the working pieces; and *the function of clamping devices will lead to the press hardening on the working pieces* when the temperature increases and decreases as recited in the instant claim 1 because the clamping device has limited the heat-expansion of the heated workpiece.

(Ans. 9; emphasis added.)

We are in agreement with Appellants that this finding is not supported by the related art and Specification (*see supra* pp. 3-4). As explained by Appellants

> [i]n Tjoelker et al the part is clearly already finally shaped before any heat treatment step, and the clamping device in which the part is held during heat treatment is simply used to prevent any change of shape during heat treatment. The clamping device is not used for shaping, but rather, is used to preclude undesired warping of the part.

(Br. 6) (emphasis omitted).

Based on our interpretation of the term "press-hardening" (*see supra* pp. 5-6, bridging para.) we are further in agreement with Appellants that Tjoelker's process does not involve a "press-hardening" step as claimed. While Tjoelker discloses a step of subjecting a workpiece to an "induction heat *treating* process" (Tjoelker, col. 4, l. 44 (emphasis added)) for the purpose of strengthening the workpiece (*see* Tjoelker, claim 1), Tjoelker does not explicitly disclose heating the workpiece to a temperature which is above the structural transformation temperature in the austenitic state, nor does Tjoelker disclose forming the heated workpiece into a final, desired shape in a tool capable of modifying the shape of the workpiece.

In sum, we determine the Examiner's rejections of appealed claims 1-12 are based on an erroneous finding that the claim 1 hot-forming steps (steps (IV)-(V)) read on Tjoelker's step of induction heating in a clamping device (*see generally* Ans. 5-8). Therefore, we reverse the Examiner's decision to reject claims 1-12.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

REVERSED

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